



# Australian Bureau of Statistics

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### **Special Article - Surveying Non-Employers and Micro-Businesses in the Construction Industry**

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#### **INTRODUCTION**

The 1996-97 Construction Industry Survey (CIS) of private sector businesses was the first detailed survey of the construction industry this decade. Because of the significance of smaller businesses and non-employing units in this industry, particular care was taken in the treatment of small businesses to ensure that an accurate statistical view of the industry was obtained. Strategies adopted included:

- the use of 2 frames-the ABS Business Register Frame, and a supplementary frame of non-employers only, drawn from the Australian Taxation Office business income tax files;
- forms design and despatch appropriate to small businesses; and
- sampling and estimation strategies for smaller businesses to reduce respondent load as far as possible (refer to the Appendix for further discussion).

The supplementary frame used for sample selection was based on 1995-96 income tax files, whereas final estimates were based on a supplementary frame from 1996-97 income tax files. These latter files contained 26% more units in scope of the survey than were in the initial frame. These additional units were accounted for in final survey estimates (refer to Appendix for further discussion).

Final results of the survey established that 94% of businesses in the industry had employment of less than 5 staff-businesses of this size are referred to as micro-businesses. The supplementary frame, developed to draw non-employing businesses into the CIS covered 59% of businesses in construction. These businesses contributed 40% of the estimate of operating profit in the industry. These results confirmed that the use of a supplementary frame for this industry, as well as strategies appropriate to the large number of small businesses in the industry, were critical to the accuracy of the estimates in the 1996-97 CIS, and essential in reducing respondent load.

#### **BACKGROUND**

The 1996-97 CIS was run as part of the ABS annual industry survey programme for that financial year. Its purpose was two-fold:

- to address the requirements of users in government and industry for updated information on the financial and structural performance at a fine industry level for each state and territory. Other information was also required by government departments and industry associations relating to a range of issues such as the impact of downturns in the industry, use of computers, and environment and waste management practices.
- to update the construction industry benchmarks and other data used by the ABS in deriving the Australian National Accounts. Prior to 1996-97, the CIS was last run in 1988-89.

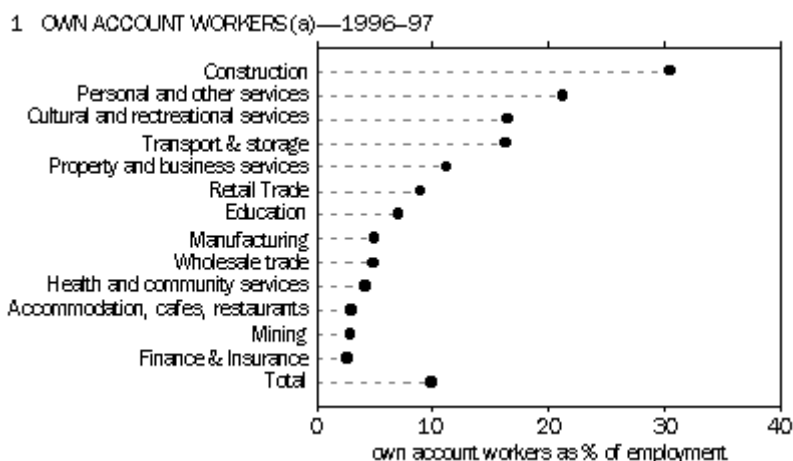
Broad-data on businesses in the construction industry has been available through the ABS Economic Activity Survey (EAS) since 1991. The strength of the EAS collection is that it presents a consistent snapshot of all industries at the same time, as well as providing an annual time series. It presents estimates at the broad industry (1 digit) and subdivisions (2 digits) levels of the Australian and New Zealand Standard Industrial Classification (ANZSIC). Estimates from the EAS are available as aggregates for the entire Construction industry (Division E of ANZSIC), or separately for General construction (Subdivision 41 of ANZSIC) or Construction Trade Services (Subdivision 42). Estimates from the EAS are not available at any finer industry level, and are designed for analysis at the national level only. However, the scope of the survey is limited to employing businesses.

For the purposes of users both within and outside the ABS, the CIS was designed to provide a finer level of industry estimates than EAS, down to the 4 digit ANZSIC level (e.g. estimates for plumbing services within subdivision 42) including non-employers. The design of the CIS also supported state and territory level estimates of a reliable quality, as far as practical.

Typically, ABS business surveys draw their frame from the ABS Business Register. The Business Register includes all businesses issued with a Group Employer (GE) number by the Australian Taxation Office (ATO), and is updated regularly with information from the ATO. The intended coverage of the ABS Business Register is all employing businesses in the economy. With the existence of a significant number of non-employing businesses in the construction industry, it was therefore necessary to develop a supplementary frame to survey this industry.

Since it was known that many micro-businesses and non-employing businesses operate in the construction industry, the ABS Business Register alone would have provided incomplete coverage of the industry. The need for a supplementary frame in the 1996-97 CIS is emphasised by statistics from:

- the ABS Business Register itself. In 1996, 85% of businesses in the construction industry were recorded with employment of less than 5;
- the ABS Survey of Employment and Earnings and the ABS Labour Force Survey indicated that of all industries, construction had the highest percentage of workers engaged on an 'own account' basis, i.e. working as a partner/director in their own unincorporated business. These businesses may or may not be employing other staff. (graph 1).



(a) Includes working proprietors and partners of unincorporated employing and non-employing businesses. Working directors of incorporated businesses are classified as employees.

**Source: Small Business in Australia, 1997 (Cat. no. 1321.0), using unpublished data from the ABS Survey of Employment and Earnings and the ABS Labour Force Survey.**

A number of sources of supplementary frames were considered, including industry membership lists, listings from the ATO of payments received under the Prescribed Payments Scheme and ATO Business Income Tax Files. After investigation, the most complete coverage of the construction industry was identified as the ATO Business Income Tax Files. The processes involved in the development of this supplementary frame are outlined in the Appendix.

## RESULTS

The 1996-97 Construction Industry Survey estimated there were 194,300 operating businesses in the construction industry, with total employment of 484,100 (table 2). The construction trade services part of the construction industry accounted for a majority of the businesses and employment—over 80% of the number of businesses and almost three-quarters of people working in the construction industry. Despite the numerical dominance of the construction trades in terms of number of businesses and employment, the general construction part of the industry accounted for over half the total income (56%) and operating expenses (60%). Over half the assets and liabilities of the construction industry were also held in the general construction part of the industry.

**Table 2 CONSTRUCTION INDUSTRY, SUMMARY OF PERFORMANCE-1996-97**

Selected indicators	Units	General construction	Construction trade services	Total construction
Operating businesses	'000	36	158	194
Employment	'000	127	357	484
Wages and salaries	\$m	3 310	4 870	8 180
Turnover	\$m	32 629	25 270	57 899
Total income	\$m	33 062	25 533	58 595
Total operating expenses	\$m	31 793	21 605	53 398

Operating profit before tax (OPBT)	\$m	1 550	3 914	5 465
Total assets	\$m	17 393	8 172	25 565
Total liabilities	\$m	12 061	4 558	16 619
Industry Gross Product (IGP)	\$m	6 049	10 132	16 181

Businesses with employment of less than five accounted for 93.8% of all businesses in the construction industry, and just over two-thirds of all people working in the industry (table 3). In contrast, less than 1% of businesses had employment of 20 or more. Only 13.6% of people in the industry worked for businesses of this size. However, businesses with employment of less than five were less dominant in terms of total income, operating expenses and Operating Profit Before Tax (OPBT) - they accounted for slightly less than half the total income and expenses, whereas businesses with employment of 20 or more accounted for almost one-third of these items. Almost three-quarters of construction industry OPBT came from businesses with employment of less than five.

The numerical dominance of micro-businesses in the construction industry in 1996-97 is clear in the results presented in tables 3, 4 and graph 5.

**Table 3 CONSTRUCTION INDUSTRY, SUMMARY OF PERFORMANCE BY REPORTED BUSINESS EMPLOYMENT SIZE-1996-97**

Selected indicators	Units	Employment less than 5	Employment 5 to 19	Employment 20 or more	All businesses
Operating businesses	'000	182.0	11.1	1.2	194.3
Employment	'000	332.2	85.9	66.0	484.1
Wages and salaries	\$m	3 221.7	2 309.8	2 648.3	8 179.8
Turnover	\$m	27 951.2	13 713.7	16 234.0	57 898.8
Total income	\$m	28 202.5	13 801.0	16 591.2	58 594.7
Total operating expenses	\$m	24 123.0	13 288.0	15 987.1	53 398.1
Operating profit before tax	\$m	4 066.5	616.4	781.7	5 464.6
Total assets	\$m	11 330.0	3 487.8	10 747.2	25 565.0
Total liabilities	\$m	6 731.7	2 344.8	7 542.6	16 619.1
Industry Gross Product	\$m	8 657.2	3 582.2	3 941.9	16 181.2

**Table 4 CONSTRUCTION INDUSTRY, PERCENTAGE OF ESTIMATES BY BUSINESS  
EMPLOYMENT SIZE-1996-97**

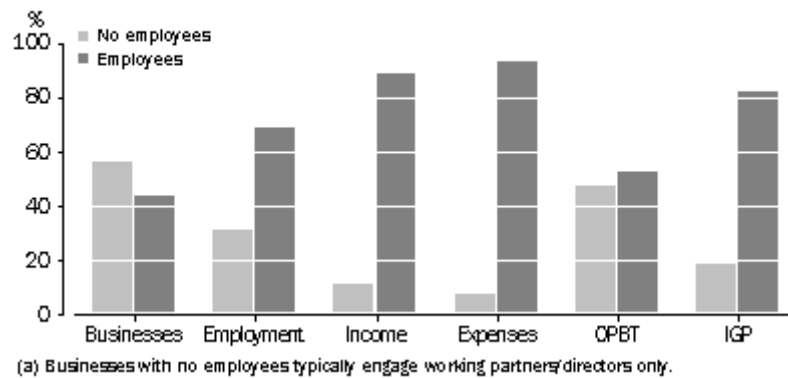
	Employment less than 5	Employment 5 to 19	Employment 20 or more	All construction
<b>Selected indicators</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Operating businesses	93.8	5.7	0.5	100
Employment	68.6	17.8	13.6	100
Wages and salaries	39.4	28.2	32.4	100
Turnover	48.3	23.7	28.0	100
Total income	48.1	23.6	28.3	100
Total operating expenses	45.2	24.9	29.9	100
Operating profit before tax	74.4	11.3	14.3	100
Total assets	44.3	13.6	42.0	100
Total liabilities	40.5	14.1	45.4	100
Industry Gross Product	53.5	22.1	24.4	100

**5 ESTIMATES FROM MICRO-BUSINESSES(a) AND ALL OTHER BUSINESSES,  
Construction Industry Survey, 1996-97**



Graph 6 presents the survey results in terms of whether the business reported any employees. This shows that over half of the businesses in the industry had no employees, and were staffed only by the working partners/directors of the business. These 'non-employing' businesses contributed 47% of OPBT and almost one-fifth (18%) of construction industry Industry Gross Product (IGP).

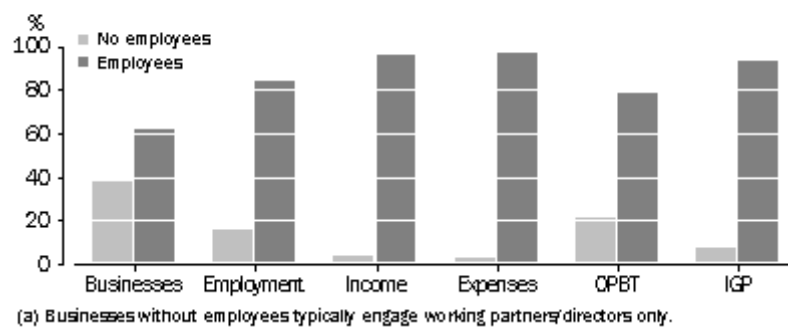
6 ESTIMATES FROM BUSINESSES WITH AND WITHOUT EMPLOYEES(a),  
Construction Industry Survey, Division E—Construction, 1996–97



Graphs 7 and 8 present the information from graph 6 in terms of the two subdivisions within the construction industry (Division E). Less than 40% of businesses in General Construction (subdivision 41) reported no employees and the only significant financial impact from businesses with no employees was on the estimates of OPBT (graph 7). In contrast, Graph 8 shows that 60% of businesses in Construction Trade Services (subdivision 42) reported no employees. Their contribution to the estimates was much more significant than businesses of this size in subdivision 41. More than half (58%) of OPBT and a quarter of the IGP estimate in subdivision 42 came from businesses with no employees.

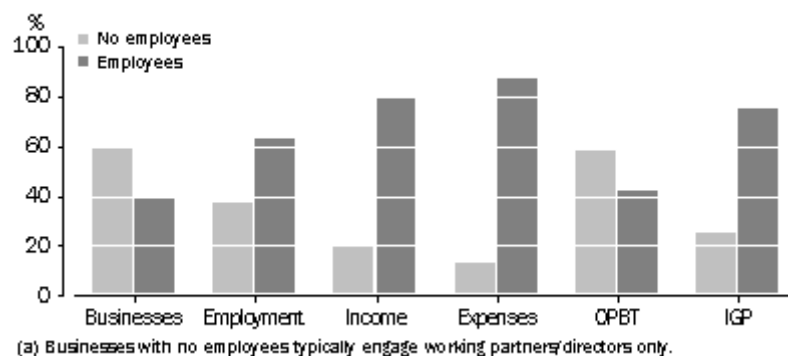
7 ESTIMATES FROM BUSINESSES WITH AND WITHOUT EMPLOYEES(a),

Construction Industry Survey, Sub-division 41—General Construction, 1996–97



8 ESTIMATES FROM BUSINESSES WITH AND WITHOUT EMPLOYEES(a),

Construction Industry Survey, Sub-division 42—Construction Trades, 1996–97



## ACCOMMODATING SMALL BUSINESSES IN THE SURVEY

The large number of small businesses in the construction industry required the development of

survey forms which were relevant to businesses of that size. Large, complex forms, can be confusing, even when they contain directions to skip questions irrelevant to that business. Inappropriately long and complex forms can therefore affect the response rate in a survey. Consequently, two form types were developed for the CIS:

- A longer form, which contained all the standard ABS financial and structural data items, as well as all the industry issues required by external users. These longer forms were sent to all businesses on the ABS frame which had employment of 5 or more. A sub-sample of micro-businesses (approximately 3,000) was also sent this form.
- A shorter form designed for micro-businesses requested only the key structural and financial information, as well as the key industry issues questions for the external users. This form was half the size of the longer form. In the case of the financial and structural information, it was possible to estimate some of the finer level items for micro-businesses and non-employers using the long forms received from the sub-sample of these businesses and the information collected from micro-businesses on the short forms (2 phase estimation). This approach ensured a reduction in overall provider load on small businesses, whilst also delivering estimates of the required quality.

Timing of the despatch of the forms for micro-businesses and non-employers was planned to fit in with the known accounting practices of these businesses. Generally the ABS despatches business surveys in August and September at the time when end of financial year accounts are being finalised. Field work prior to the CIS established that micro-businesses and non-employers did not have their accounts available until February or March in the year following the end of a financial year. Consequently, to ease completion of the survey by the micro-businesses and non-employers, and to maximise the response rates as early as possible after despatch, these businesses were sent their CIS forms in February 1998.

## **CONCLUSION**

The 1996-97 CIS demonstrated the significant contribution that micro-businesses and non-employing businesses make in the construction industry. Appropriate methodology to identify these businesses through a supplementary frame was critical to the quality of the estimates from the survey. Relevant form design issues, timing of despatches and management of respondent load issues were other key factors in the conduct of this survey. An accurate snap-shot of the industry, and the many small businesses which comprise it, has been obtained for the first time this decade.

As the ABS moves toward making more use of data from the ATO to reduce sample sizes and respondent load in its business surveys, the CIS also offers an important opportunity for rigorous confrontation of the results from the CIS and these ATO data investigations, to enable continuing improvements in the increased use of tax data. Such work will also feed into considerations of future methodologies for surveying the construction industry.

## **FINAL RESULTS**

The final results of the 1996-97 CIS are available in Private Sector Construction Industry, Australia (Cat. no. 8772.0), available in ABS Bookshops. Key results are also available on the ABS Web-site at [www.abs.gov.au](http://www.abs.gov.au).

## **APPENDIX**

### **METHODOLOGY**

## **DEVELOPING A SUPPLEMENTARY FRAME USING BUSINESS INCOME TAX FILES**

In 1994, the ABS began intensive work on a project to make increased use of Australian Tax Office data, with the aim of reducing ABS sample sizes and respondent load on the business sector. The ATO is permitted under its legislation to allow authorised ATO representatives to communicate information to the Australian Statistician for the purposes of the Census and Statistics Act, 1905. However, the Census and Statistics Act requires that the ABS does not release any information to any other person or agency, including the ATO, which would identify individuals or businesses.

The CIS project tapped into this work on the use of ATO data, and developed a supplementary frame by the use of ATO Business Income Tax Files for:

- companies;
- individuals with business income; and
- partnerships and trusts.

Whilst the ATO collects considerable financial information about a business for determination of tax liabilities, it does not collect direct information on whether a business has employees. Consequently the ABS Tax Project developed a definition of non-employing businesses on the basis of other indicative information provided on income tax assessment forms submitted to the ATO by individuals, companies and partnerships and trusts.

After testing through the CIS sample coverage survey (discussed below), the CIS identified non-employers on the Income Tax Files as those businesses with the following characteristics in the construction industry:

- no wages and salaries expenses; and
- no employee superannuation expenses, and
- income and expenses within the range of \$5,000 to \$2 million, or between minus \$2 million to minus \$5,000, in various specified combinations.

These requirements worked together to exclude employing businesses, employees and casual labourers in the industry, (for example university students undertaking holiday work).

The use of ATO Business Income Tax Files was complicated not only by the lack of direct employment information, but also by the time required by ATO to finalise processing of all tax returns. This usually takes about 18 months from the end of a financial year. For CIS, this meant that a final listing of businesses in the construction industry for 1996-97 was not available to the ABS until the end of 1998. As it would have been impractical to wait until then to despatch forms seeking 1996-97 data, the CIS had to use the 1995-96 income tax files as the frame for the 1996-97 survey.

When the 1996-97 files became available at the end of 1998, the new files were compared to the 1995-96 files. This comparison of businesses on the 1996-97 and 1995-96 business income tax files showed that 26% of the businesses on the 1996-97 files had not appeared on the 1995-96 files and therefore, had not had a chance of selection in the CIS. An adjustment was made to the CIS estimates before publication to account for these businesses. The method used to adjust CIS data for these businesses used information from the 1995-96 sample frame along with



information reported by similar businesses in the CIS. Due to frames from different ATO files being used, potential double counting existed and a conservative approach was taken to data adjustment to minimise the potential effect of any duplication. Units which had gone out of business between 1995-96 and 1996-97 were accounted for as part of the cancellation of units during the course of the CIS. Adjustments were also made to the ABS Business Register for units which were not on that frame at the time the sample was drawn. Overall, the adjustments for both frames identified 17% of businesses which were not on the frames at the time the samples were selected.

## **MANAGING OVERLAP BETWEEN TWO FRAMES**

A major challenge in the use of two frames for a survey is the reduction and control of overlap of units which appear on both those frames. The approach taken in the CIS was to treat the ATO frame as a supplementary frame to the ABS Business Register, and require that each business should have only one chance of selection in the survey. To achieve this, the 9,000 selections from the ATO frame were matched against the ABS frame, with any matched units removed from the ATO sample. This ensured that any units which were sent a survey form only had one chance of being selected. In practice, it was possible for businesses to change structure or size in the time between being listed on the frame and being despatched a survey form. Such duplicates were addressed during the processing of the survey with standard ABS editing procedures.

## **CHECKING THE FRAMES AND SAMPLE SELECTION**

The accuracy of the definition of non-employing businesses, as well as the currency of industry and business size information on the two frames was determined prior to the final samples being drawn, through a sample coverage survey.

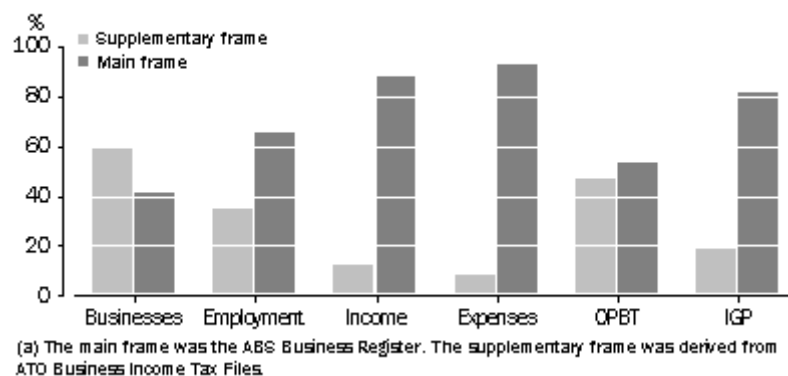
Approximately 2,000 units across the two frames were sent a form which assisted in determining current industry (at the ANZSIC 4 digit level) and size of the business. A selection of businesses identified as non-employing businesses on the ATO frame were also sent coverage survey forms, to determine if the proposed definition was correctly selecting non-employing units.

On the basis of results from the coverage survey and the requirement that the CIS deliver a Relative Standard Error of 5% on total income at the Australia level, it was determined that a sample of approximately 40,000 businesses was required for the CIS. Approximately one-quarter of these businesses were to be drawn from the ATO frame, with the remaining units to be drawn from the ABS Business Register.

## **CONCLUSION**

The CIS faced the problem of under-coverage of a significant proportion of the construction industry if it used only the ABS Business Register. Graph 9 illustrates the improved coverage and quality of the estimates achieved through the development of a supplementary frame using business income tax files. Over half of all businesses estimated in this industry were on the supplementary frame. Whilst the many businesses from this supplementary frame did not make a significant contribution to industry income or expenses estimates, their contribution to operating profit before tax is noticeable. This is because businesses from the supplementary frame were predominantly non-employing businesses which typically do not pay wages or salaries, but take drawings from profits of the business after tax. More significant is their contribution to IGP. Without the inclusion of businesses from the supplementary frame, the CIS would have underestimated IGP in this industry by approximately 20%.

9 ESTIMATES FROM THE MAIN AND SUPPLEMENTARY FRAMES (a),  
Construction Industry Survey, Division E—Construction, 1996–97



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